Roll No..... **Total no. of printed pages: [01]**

Total No. of questions: [09]

B.Sc. (Hons.) AME (Semester-3rd)

ELECTRONICS FUNDAMENTAL AND DIGITAL TECHNIQUE-I

Sub code: BAME3-321

Paper ID: [20131114]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section A **(2 marks each)**

Q1. Attempt the following:

a. What is the difference between an ordinary diode and Zener diode?
b. Why is full wave rectifier preferred to half wave rectifier?
c. What is Dark resistance of photo diode?
d. Define the relation between α and β.
e. What are the three possible states of a transistor?
f. What is thermal runaway?
g. What are the two basic types of feedback?
h. Obtain the 2's compliment of $(1010)_2$ and $(11010101)_2$
i. Convert A92H to Octal and binary.
j. What is meant by logic gates?

Section B **(5marks each)**

Q2. Explain the applications and working of Tunnel diode with characteristics.

Q3. Explain the advantages and disadvantages of Integrated circuit.

Q4. Explain the Numerical aperture and cone of acceptance of fibres.

Q5. Write the characteristics of operational Amplifier.

Q6. Explain the transistor as an amplifier.

Section C **(10 marks each)**

Q7. Explain the construction and working of Full wave bridge rectifier and centre tape rectifier. Also write advantages and disadvantages.

Q8. Describe the types of Analog to digital conversions circuits.

Q9. Explain the types of semiconductors and the formation of pn junction.